SOUND FACTS

Preserving Puget Sound's shellfish growing areas

The cool, clean waters and rich tidelands of Puget Sound provide some of the finest shellfish habitat in the world. Unfortunately, pollution from human sewage and animal wastes can contaminate and close these waters to shellfish harvesting.

In the past 15 years, restoration efforts have successfully cleaned up and brought back shellfish harvesting in a number of areas in the Puget Sound region. Despite these successes, however, this valuable work could prove futile in the long term unless it is complemented by more far-sighted strategies that provide lasting protection of our marine waters and watersheds.

Two major challenges stand in the way of keeping shellfish areas healthy: the region's large and fast-growing population and the rapidly urbanizing landscape. More than 4 million people live in the Puget Sound region. Population forecasters predict the number to expand steadily, which will place greater pressure on the region's shellfish harvest areas.

To address these challenges the Puget Sound Action Team studied the relationship between watershed development and water quality in shellfish growing areas. Following the study, the Action Team recommended guidelines to more effectively protect and preserve the region's prized shellfish areas.

The **Effects of Growth and Urbanization on Shellfish** project contains three elements:

- Review of the available research to define the problem and better understand the effects of coastal development on nearshore water quality.
- Research to assess the relationship between different patterns and densities of development and pollution levels in shellfish growing areas.
- Recommendations to enhance long-term protection of Puget Sound's shellfish growing areas.

The project yielded findings similar to recent research and recommendations for other aquatic resources, including salmon-bearing streams and nearshore habitats. These findings point to the importance of healthy watersheds and ecosystems as the essential framework for protecting marine habitats and resources over the long term.

Shellfish/Urbanization products

The following publications from the shellfish-urbanization project are available on the Puget Sound Action Team's Web site at www.psat.wa.gov/urbanization:

- *Literature Review and Analysis: Coastal Urbanization of Shellfish Growing Areas,* by Stuart Glasoe and Aimee Christy. (Puget Sound Action Team)
- *Assessing the Impacts of Shellfish Growing Areas in Puget Sound,* by Marina Alberti and Marcie Bidwell. (University of Washington Urban Ecology Research Laboratory)
- *New Approaches to Shellfish Protection in Puget Sound*, by Stuart Glasoe, Harriet Beale, Marina Alberti, Marcie Bidwell, Aimee Christy and Christopher May. (Puget Sound Action Team)

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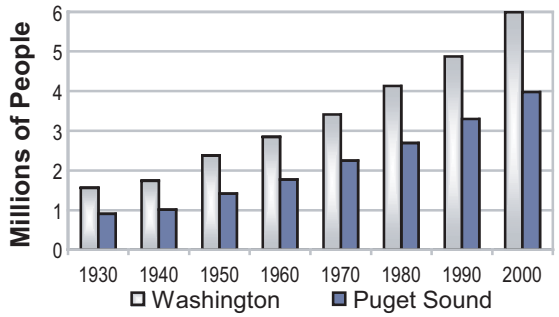
Rural areas with low levels of development are best suited to shellfish harvesting. | *Toni Weyman Droscher*

As development increases in a watershed, water quality tends to decline and can prohibit the harvest of shellfish. | *Kathy Taylor*

Key Findings

- Pollution from pathogens (disease-causing agents in sewage and animal waste) is a chronic problem in many coastal areas of the country and is closely associated with heavy population densities, development levels, rainfall events, stormwater runoff and river flows.
- The process of development changes the way water moves through a watershed and makes it easier for pollution to reach streams and shoreline areas.
- Urbanization directly affects the health of freshwater and nearshore aquatic habitats. Effects tend to show up at low levels of development and then amplify as development progresses.
- The literature review and the University of Washington's research found that increased impervious cover and decreased forest cover correlate strongly with higher levels of bacteria in shellfish growing areas of Puget Sound.
- Urban levels of development are generally incompatible with safe shellfish harvesting. No universal standards or thresholds exist for determining suitable land uses and development levels in watersheds draining to shellfish growing areas.

Washington state and Puget Sound populations, 1930-2000



Source: Office of Financial Management

Key Recommendations

- **Preserve forest cover**. Native vegetation and soils provide irreplaceable functions. Replant trees and amend soils in areas that have been cleared or damaged.
- **Preserve and restore wetlands and other natural drainages** that naturally hold, absorb and slowly release water. These features help regulate the movement of water and the break down of pollutants.
- **Preserve continuous riparian corridors** with mature, native vegetation to protect and buffer streams, shorelines and other water bodies.
- **Limit impervious surfaces**—such as rooftops, concrete and asphalt—that generate stormwater runoff. Wherever possible, disconnect these surfaces from pipes and other drainage systems and use alternative materials and approaches to reduce runoff and promote onsite infiltration.
- **Prevent pollution**. Pollution is hard to control and expensive to clean up. Take care of onsite sewage systems and wastes from domestic animals, boats and other fecal sources.
- **Manage growth**. Direct population growth and development to urban growth areas. Limit development densities in sensitive watersheds and rural areas to preserve the value and integrity of these areas and the industries they support.
- **Plan for protection**. Determine land uses based on long-term protection and use of water resources. Use local planning tools to tailor development policies and standards to needs and conditions in different areas.
- **Use appropriate infrastructure.** Try to avoid development densities that require use of large-scale sewer systems. Instead, aim to use low impact development principles and practices and decentralized wastewater approaches that support rural density land uses in shellfish watersheds.

For more information about the Action Team visit www.psat.wa.gov or call the Action Team at (360) 725-5444 or (800) 54-SOUND.
If you need these materials in an alternative format, call our TDD number: (800) 833-6388.

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